**Datasort:**

Sort data and store into structures for convenience and generate scatter diagram from 10 years’ raw data;

**Site 14\_new – this is the main script.**

1. Marginal distribution of wind speed (Weibull)

Fit wind speed data with 2 parameter weibull distribution and get shape and scale parameters; We get f(U)

1. Conditional distribution of Hs for given wind speed U (Weibull)

Fit Hs data of each wind speed class U with 2 parameter weibull distribution, get shape and scale parameters;

Then fit Weibull parameters as a function of wind speed; so we could get f(Hs|U);

1. Conditional distribution of Tp|Hs, Uw

Follow the methods in Johannessen et al (2001).

Tp\_distribution\_follow\_std\_Har\_first

Functions from WAFO:

empdistr: Computes and plots the empirical CDF

wweibplot: Plots data on a Weibull distribution paper

**contour\_3D\_new;**

Use contour line method to get the 3D contour surface of (Tp, Hs, Uw) with updated fitting methods;

**NB:**

The initial values for nonlinear fittings may not always be reasonable; Should choose good values to obtain the right fitting parameters.

Control the tail of ratio\_fitting; (ratio between std(Tp) and mu(Tp) )

Control the intersection point of mean\_ tp\_h fitting and mean\_uw\_h\_fitting;